

**Assessment, Improvement, Measurement (AIM) Report: 03/13/2015****Reporting Years:** 2011-2016**Program:** Electrical Technology**Coordinator(s):** Karman Wheeler, Paul Turner**Program Quality and Student Success****External awards or other recognitions of students, faculty, and/or program.**

	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Students					
Faculty					
Program (include accreditation if applicable)					

**Average actual time and credits to degree completion.**

	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
General Education Credit Hours					
Technical Credit Hours					
Total Credit Hours					
Number of Graduates					
Average Actual Time to Degree					
Average Actual Credits to Degree					

**Employer and student satisfaction.**

	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Employer Satisfaction Survey Results		100% (2/2)	100% (8/8) *	0 responses	
Graduate/student satisfaction		83% (10/12) 2010-11 grads	87% (26/30) 2011-12 grad survey	87% (13/15) 2012-13 grads	
Advisory Board/Employer Recommendations for Improvement				Electrical Technology Program Health 2014 2015	

**Job placement data for program graduates.**

	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016

Number of graduates		10 surveyed (2010-11 grads)	30 surveyed (2011-12 grads)	16 surveyed (2012-13 grads)	
Number of graduates gaining employment		10	27 employed;20 in field	12 employed; 9 in field.	
Percentage of graduates gaining employment		100%	90%; 67% in field.	75%; 56% in field.	
KY Unemployment Insurance job data		UI 87%	UI = 84%	83.7% (n=49)	

**Pass rates on licensure/certification exams (if applicable).**

	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Total # graduates attempting					
Total # passing on first attempt					
Total # passing after multiple attempts					
Pass rate of all attempting					

**Productivity and Funding**

**Student measures.**

	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Enrollment (Academic Year)					
Fall Enrollment		128 (Fall 2011)	107 (Fall 2012)	90 (Fall 2013)	
Credentials Conferred		34 AD, 29 dip, 199 certs (2011-12)	28 AD; 26 dip; 130 certs (2012-13)	18 AAS;18 dip;124 certs (2013-14)	
Credit hour production		710 (Fall 2011)	884 (Fall 2012)		

**Student credit hour per instructional faculty FTE.**

	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
Student credit hour per instructional faculty FTE.		85 (D); 194 (Le) Fall 2011)	120 (D); 185 (Le) Fall 2012		

**Extramural funding.**

Source of Funding	2011-2012
No funding sources	

Source of Funding	2012-2013

2012 Perkins - control logix trainers	\$42,000.00
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<b>Source of Funding</b>	<b>2013-2014</b>
2013 Perkins - electricity trainers	\$32,000.00

<b>Source of Funding</b>	<b>2014-2015</b>
No funding sources	

<b>Source of Funding</b>	<b>2015-2016</b>
No funding sources	

**Comments (2012-2013)**

<b>Roles</b>	<b>Comments</b>
<b>Coordinator</b>	
1. Strengths of the Program	<p>Graduated students are being hired at local factories and students are in good demand. Local industries are contacting instructors and coordinators, when searching for new hires. Local construction is slow, but picking up for students pursuing electrical construction work. Student enrollment numbers are average, but remaining stable, most classes offered are made. Licensure rates for electricians are not being reported, because there is no means other than direct contact with working students to find out if they tested, and passed. Maintenance electricians are often not required to be licensed. The division safety committee has procured equipment and materials needed to enhance awareness and student safety from electrical hazards. Instructors are pursuing training in new technologies, but not finding funding with Allen Bradley PLC training. Labs are improved with newer and innovative equipment such as; controllogix programmable logic trainers and timer modules for the motor control 1 lab. Past assessments of students in motor control and rotating machines has identified needs for newer technology, and they are currently being utilized; this will allow more standardization of our equipment in these labs. Pursuit of green and renewable technologies is ongoing and is awaiting money and space that has been requested to the academic dean and vice-president. The Coordinator is scheduled for Advanced Training in Solar Voltaic Systems and Installation November and December 2012. Funding for Green Technologies is requested. A plan is being developed by the state curriculum committee for electrical technology to use a national assessment instrument to evaluate finishing students before graduation; the NOCTI evaluation has been selected, and should be implemented in the coming year. These assessments will better identify deficiencies or improvements needed for our program instruction. The communication between the program coordinator, and instructors teaching motor controls and rotating machinery has improved, and more a more comprehensive means of assessment has been discussed that should result in better reporting of progress by the student. The replacement of Mr. Douglass retiring at Danville Campus will insure someone qualified to teach Motor Controls II; the hiring process should begin soon. A hybrid class that was started 4 semesters ago at Danville Campus (Industrial Safety) is continuing and has improved student knowledge of electrical hazards and has taught them to assess electrical, and work site hazards, and how to select proper PPE, and communication of affected persons.</p>
2. Items Requiring Continued Attention	<p>Items Requiring Continued Attention - Space and storage is still a problem, unused program materials are being scrapped, and thrown away for lack of space. Some lab instruction has been restricted, or not performed because tasks cannot be simulated as in the field. This will be a problem since tasks in the NOCTI test standards may not be adequately practiced. This may cause the electrical technology program to eliminate electrical construction out of the program offerings. Training of instructors in newer technologies such as Allen Bradley is needed, and should be discussed in division meetings; to find</p>

	a resolution of this need. Industry needs must be re-evaluated, or better communication established to improve employer satisfaction of our student hires, and open new avenues of employment for our program graduates, discussions in progress.
3. Document and provide evidence indicating how last year's program review resulted in improvements in the program.	Document and provide evidence indicating how last year program review has resulted in improvements in the program/department. Evaluation of the motor control, and rotating machine labs was improved with task evaluation rubrics, and statistics being forwarded to the coordinator. The last assessment this time last year did not concentrate on the objectives planned, but was corrected. The evaluation instrument in these laboratories will include both written and observed task performance per the plan implemented by the coordinator and instructors. This model will be used going forward as described in the end of year report 2011/2012.
<b>Assistant Dean</b>	The Electrical Technology program has high scores for Student Satisfaction (100%) and Employer Satisfaction for technical classes/proficiency (100%) for the reporting period. The Employer Satisfaction for General Education courses did drop from (100% to 50%) for this reporting period. We will monitor this for the coming year and discuss the findings with the program advisory committee. The reported Job placement figures did drop from 100% to 25% for the 2010 2011 school year. The economy was sluggish during the period and may account for some of this decrease in placement. Since that time manufacturing in the Bluegrass region has rebounded and it is hoped returned to normal figures for the area. There were only four responses returned during this reporting period calling into question the validity of the data. The placement rate will be monitored for the coming year and reevaluated at that time. The Electrical Technology program continues to have strong enrollment and a high number of credentials issued for the reporting period. According to the KCTCS 2010 2011 Fact Book the program issued 283 credentials which included associate degrees, diplomas, and certificates. This represents 7.66 percent of the total credentials issued by Bluegrass Community and Technical College. This was up from 242 for the preceding reporting period. Please see below. <a href="http://www.kctcs.edu/~media/System_Office/About/Factbook%2012/1_Factbook_11-12_WEB_2.ashx">http://www.kctcs.edu/~media/System_Office/About/Factbook%2012/1_Factbook_11-12_WEB_2.ashx</a> Prior to 2009 2010 school year student Retention scores have been above 50% for the Electrical Technology program. Beginning in 2009 2010 a large number of WIA, WIB, and TIA students returned to school as the economy forced many companies in the area to lay off workers. This may have contributed to a larger number of workers with needs for transitional/remedial courses which adversely affected the retention rates. According to data available from the BCTC Retention Committee individuals with low Reading, Writing, and Mathematics scores have a higher dropout rates historically. The figures will be monitored in the coming reporting period.
<b>Dean</b>	Agree with comments from assistant dean and coordinator.
<b>Vice President</b>	Electrical Technology is a cornerstone industrial program with dedicated faculty and leadership. The ratio of full-time equivalent students to full-time equivalent faculty (10.5) is down from 11.5 and needs to return to a healthier level.

### Comments (2013-2014)

<b>Roles</b>	<b>Comments</b>
<b>Coordinator</b>	
1. Strengths of the Program	Currently, electrical students are finding part-time work during the time they are taking classes. Graduating students are in high demand with local manufacturing industries, especially temporary services for maintenance workers. Local construction is slowly beginning to start up with hiring to probably begin in spring with some students currently working for local contractors, and some coop positions during the summer. Student numbers are dropping slightly with many new students going to the Industrial Maintenance Program at Danville. Some students plan on taking the State Electrician's Licensing Exam, but the state is not reporting their pass rate. The NOCTI test for Industrial Electricians will be the exit exam to be taken before graduation starting the fall of 2014. Also a Capstone class has been chosen by the state curriculum committee to be implemented to last semester electrical students starting in the fall of 2014. Online classes are being offered in the National Electrical Code and Hybrid courses are offered for Industrial Safety and for a new class for

	<p>Solar and Wind Technologies. Electrical course numbers are good for the upcoming semester for Transformers, Rotating Machinery, and Motor Control 1 and 2, with a second section being offered at Danville campus. Instructors have been busy at Leestown Campus in anticipation for three new classes. EGY230 Solar Technology, EGY250 Wind Technology, and a Hybrid class AET114 on Fridays for Solar and Wind Technologies. This a part of a new electrical technology certificate being offered. All new classes have some students enrolled. The Instructors have obtained training and practice on live solar, and wind equipment. New equipment has been procured, and some already installed. A lab has been opened in the Manufacturing Building at Leestown Campus for structured labs and live field work will be started in the spring, of 2014. One Instructor has achieved basic certification as a solar installer, and has an Electrical Contractor's License. Training for MIT instructors is available through the Southeastern Network of Trainers, part of the U. S. Department of Energy. The College has new membership of this organization. Assessment of lab work has improved for the purpose of continuous improvement, and assesses the needs of the Program. A new instructor was hired in the Spring of 2013 at Danville to teach the Motor Controls 2 class and Lab, which was vacated due to the retirement of Mr. Ken Douglass. A new adjunct faculty was added to teach Circuits 1 and Circuits 2, and is working out well.</p>
2. Items Requiring Continued Attention	<p>Storage Space and Lab space has been an ongoing problem for 12 years at Danville Campus, and has been reported. This has caused a loss of some students, and has affected recruitment of Local Area Technology Students due to very confined space. Spacing of equipment and access to equipment is problematic, with little or no storage space. Certain Laboratory exercises have to be partially done due to space, and lack of working area. New offerings of Advanced PLC Training classes, Robotics or Alternative Energy classes could be offered, but there can be no expansion at this time due to space. Training for Programmable Logic Controllers is needed for instructors. Local involvement with the electrical program and local manufacturers is very limited. While employment satisfaction of our students has been relatively good, it could be better. Recruitment of Electricity students would be better if the economy and new building construction was better. Expansion of the lab space and program offerings is needed especially at Danville Campus</p>
3. Document and provide evidence indicating how last year's program review resulted in improvements in the program.	<p>Evaluation of our current lab classes have improved due to an evaluation of how we used rubrics based on task competencies, and objectives, that were needed in construction and electrical classes. Also better communication of instructors has improved lab conditions, and reporting. A vast improvement in safety among students and instructors can be observed, in all lab settings. Experienced Instructors and enforcement of rules in the lab has created a safe learning environment for our students. New concentration of OSHA and NFPA70E compliance enhances our ability to coach and mentor students and uses those standards as a measurement tool in the lab assessments. Better organization and student understanding is due to these standards being implemented. Our students thusly are more, and better prepared for the workforce.</p>
<b>Assistant Dean</b>	<p>The Electrical Technology program has high scores for Student Satisfaction (87%) and Employer Satisfaction for technical classes/proficiency (100%) for the reporting period. The reported Job Placement figures are good, 83% for the 2012-2013 school year and 87% for the 2013-2014 school year. Manufacturing in the Bluegrass Region has rebounded since a low in 2010. It is forecast to remain strong and even increase in the next reporting period. The Electrical Technology program continues to have strong enrollment and a high number of credentials issued for the reporting period. According to the KCTCS 2011-2012 Fact Book the program issued 262 credentials which included associate degrees, diplomas, and certificates. This represents 7.34 percent of the total credentials issued by Bluegrass Community and Technical College. This is in keeping with the data from the last several years. The program issued 242 credentials in 2009-2010 and 283 for the 2010-2011 reporting period. Please see below. <a href="http://www.kctcs.edu/About_KCTCS/KCTCS_Factbook/2012-13_Fact_Book.aspx">http://www.kctcs.edu/About_KCTCS/KCTCS_Factbook/2012-13_Fact_Book.aspx</a></p>
<b>Dean</b>	<p>Excellent description of the Electric Technology program by the coordinator and AD. Strong faculty and strong supportive Advisory group.</p>
<b>Vice President</b>	<p>I agree with Assistant Dean and Dean comments. The college's fiscal realities will necessitate a close look at this program to determine how we can effectively and efficiently meet student and industry needs. The hope is that this program will be located only in Danville and Georgetown within three years.</p>

**Comments (2014-2015)**

<b>Roles</b>	<b>Comments</b>
<b>Coordinator</b>	
1. Strengths of the Program	The Electrical Technology program continues to be strong. Enrollment continues to be excellent with ninety students enrolled in the program as of the last reporting period. The Electrical Technology Program is not offered by any of the area ♦for profit♦ educational institutions and is the sole source of Electrical Technology training in the Bluegrass Region. The program faculty are all senior professionals with many years of both industry and teaching experience. The program is well supported by the local advisory committee.
2. Items Requiring Continued Attention	The Employer Satisfaction Survey Results for 2014-2015 have not been received. The Employer Satisfaction Survey Results for the program have historically been very good. The results for 2012-2013 and 2013-2014 were both 100% satisfaction scores. Job Placement Data for Program Graduates for 2014-2015 reflected 75 % employment with 56 % of graduates finding employment in their field. This is down somewhat from the last reporting period of 2013-2014. The trend may be due in part to the slow housing market which has yet to fully recover from the financial downturn in 2008. According to US Government Statistics <a href="http://www.bls.gov/opub/mlr/2013/article/pdf/industry-employment-and-output-projections-to-2022.pdf">http://www.bls.gov/opub/mlr/2013/article/pdf/industry-employment-and-output-projections-to-2022.pdf</a> the annual rate of change in Construction declined 1.7 percent in the period between 2008 and 2012 and Manufacturing declined 2.4 percent in the same period. While Manufacturing has rebounded in Kentucky the national numbers are predicted to be negative compared to historical performance. Construction is projected to increase 2.6 percent in the period between 2012 and 2022 reflecting the overall trend of the economy in general. It is to be hoped that the present trend will begin to reverse itself in the next reporting period. We will continue to monitor the situation. The number of credentials awarded during the 2014 2015 period which is the last reporting period showed 18 Associate in Applied Science degrees, 18 diplomas, and 124 certificates. This reflects only those degrees applied for and to be awarded in December 2014 and does not include those to be awarded in May 2015. The Student credit hour per instructional faculty FTE has increased at the Danville campus and remained substantially the same for the Leestown campus during the reporting period. This number is expected to increase in the future with the retirement of the several individuals and the resultant increased load on those faculty members remaining.
3. Document and provide evidence indicating how last year's program review resulted in improvements in the program.	Last year faculty identified the motor control, and rotating machine laboratories were adequate, but could be greatly improved. New capital construction is planned which will allow expansion of programs. During the last reporting period the division safety committee identified equipment and materials needed to enhance student and lab safety. Instructors are pursuing training in new technologies, and enhancing the program labs with newer and innovative equipment. Past assessments of students in motor control and rotating machines identified needs for newer technology. Program faculty are in the process of planning the construction of new trainers which will allow more standardization of our equipment in these labs. Pursuit of green, and renewable technologies is ongoing.
<b>Assistant Dean</b>	The Electrical Technology program has high scores for Student Satisfaction (87%). The reported Job Placement figures have dropped from last year but, that may be attributed to a lower number of enrollments and fewer construction types jobs available. The Electrical Technology program continues to have strong ties to industry and an involved advisory committee.
<b>Dean</b>	Agree with comments of coordinator and AD. Strong faculty, strong program with healthy student numbers.
<b>Vice President</b>	I concur with Assistant Dean and Dean comments. I encourage faculty to embrace the Core Manufacturing Exercise discussion that is beginning within the division. Like with all other technical programs, I encourage the program to consider additional apprenticeship and other industry sponsorship opportunities.